SIEMENS

HiPath 3000
HiPath Xpressions Compact

Version 1.0

Installation and Administration Guide

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1 Preface

This installation and administration manual is intended for system administrators and service technicians who are already familiar with the HiPath Xpressions Compact (IVM) and HiPath 3000 systems.

This serves as a reference work for initial start-up, software upgrades, data backups and system settings. Beyond this, it includes information regarding troubleshooting, system monitoring and degree of utilization, statistics and other service topics.

It does not provide instructions on operating the HiPath Xpressions Compact via the telephone interface (user or super user). Refer to the following documentation for this:

- HiPath Xpressions Compact version 1.0, operating instructions
- HiPath Xpressions Compact version 1.0, quick reference guide

Nor does is describe setting up the HiPath 3000 system in detail, but rather addresses special functions only. If required, please refer to the following documentation for this:

- HiPath 3000 version 1.2, service manual

If you have additional questions which cannot be clarified with the help of this installation and administration manual, please contact your customer service center.

Regarding Use of this Installation and Administration Manual

The manual is laid out so that users can proceed from chapter to chapter in the order in which they appear (see table of contents).

2 Introduction

2.1 General

The HiPath Xpressions Compact module is designed for full integration into the telephone system. As a result, instructions included in the HiPath 3000 version 1.2 service manual generally apply (safety precautions, installation instructions etc.).

Modules included in the HiPath Xpressions Compact family are only supported as of HiPath 3000 V1.2, featuring the new CBCPR, CBCC, CBCP, CBRC and CBRP central controllers:

IVMP8	S30122-Q7379-X100	HiPath 3350 (POINT)	8 Ports
IVMP8R	S30122-K7379-Z100	HiPath 3300 (19” POINT)	8 Ports
IVMS8	S30122-Q7379-X	HiPath 3550 (COM), HiPath 3350 (POINT)	8 Ports
IVMS8R	S30122-K7379-Z	HiPath 3500 (19“ COM), HiPath 3300 (19“ POINT)	8 Ports
IVML8	S30122-Q7380-X100	HiPath 3750 (PRO), HiPath 3700 (19“ PRO)	8 Ports
IVML24	S30122-Q7380-X	HiPath 3750 (PRO), HiPath 3700 (19“ PRO)	24 Ports

- Only one IVM module is allowed per system.
- The IVMP8/P8R module only functions in HiPath 33x0 systems.
- To prevent overheating, the IVMS8/P8 may only be operated in the lower slots (5, 7, 9) in HiPath 3550 and HiPath 3350 (wall casing).
- The IVMLx modules are not certified for operation in HiPath 3550
- The IVML24 may not be used in a PCM Highway together with an SLM024. Full accessibility is otherwise no longer possible for master-slave operation with the SLM024.
- The IVM Lx may only be inserted into the slot directly to the left of the PSU in HiPath 37x0 systems.

The HiPath Xpressions Compact is linked to the HiPath 3000 system as an S0 bus user, i.e. dialing and additional information are transmitted via the D channel without utilizing any additional touch-tone transmitter and receiver resources within the system. Only navigation within a mailbox or entries made during a live connection are accomplished via touch-tone inband signaling.

In order to assure quick and simple setup, the HiPath Xpressions Compact is equipped with a given set of parameters directly from the HiPath 3000 system during power-up (extension number for the IVM group line and IVM ports, feature ID numbers, circuit group and system extensions, IP addresses, date and time). This data is synchronized with the HiPath Xpressions Compact in the event of system changes.

Otherwise, setup data for HiPath Xpressions Compact is stored on the hard disk itself and not linked to the system CDS. For example, setup data is not necessarily lost if the system is re-loaded, but is not part of the CDS backup either. However, IVM setup data is part of the CDS at the HiPath 3000 Manager E (the former Assistant E), and is, for example, loaded along with the CDS or saved.

Administration is always performed via HiPath 3000 Manager E.

The LAN interface, with its larger throughput capacity, is recommended for transmitting large volumes of data (message backups etc.).

2.2 IVM Control Elements and Interfaces

IVM modules are equipped with 2 LEDs and a switch. The IVMS8/S8R and IVMP8/P8R is equipped with a push-button switch and the IVML8/L24 with a rocker switch.

- Green LED: operating state
- Yellow LED: disabled or error status

  The various signals which occur during power-up and operation are described below in section 3.2, section 3.3 and section 6.1.
- Switch: module disabling

  If the switch is in its upper position (IVML8/L24), or the depressed position (IVMS8/S8R, IVMP8/P8R), the module is in the operating mode. If the switch is activated the module is disabled. Existing connections are not interrupted, but no new connections can be established after disabling. The yellow LED lights up after all connections a have been terminated (see also section 6.1).

A LAN interface is also available. With IVMS8/S8R and IVMP8/P8R is is realized as an RJ45 plug leading directly from the module. With IVML8/L24, a LAN adapter (SIPAC 1U - RJ45, article number C39228-A7195-A10) leads directly from the backplane.

- RJ45 LAN connection (10/100 MBit/sec): backup / restore, upgrade

2.3 Limits

Up to 500 mailboxes can be installed.

The following mailbox types are limited:

AutoAttendant mailboxes:	100
Information mailboxes:	100

Depending on the module type, 8 to 24 ports are supported.

IVMP8/P8R	8 Ports
IVMS8/S8R:	8 Ports
IVML8:	8 Ports
IVML24:	24 Ports

3 Installation

All of the safety precautions included in the HiPath 3000 version 1.2 service manual must be observed.

HiPath Xpressions Compact modules should be handled like all other HiPath 3000 modules. The IVMS8/S8R and the IVMP8/P8R may not be inserted or removed during operation, although this is possible with the IVML8 and the IVML24.

3.1 System Requirements

Installation of HiPath Xpressions Compact is only possible if the following requirements have been met:

One free slot:	Only directly to the left of the PSU in HiPath 37x0 systems. Not together with an SLMO24 on the same PCM highway if a IVML24 is used. Only in the lower slots of HiPath 3550 / HiPath 3350 wall systems.
One IVM module:	IVMP8: S30122-Q7379-X100 IVMP8R: S30122-K7379-Z100 IVMS8: S30122-Q7379-X IVMS8R: S30122-K7379-Z IVML8: S30122-Q7380-X100 IVML24: S30122-Q7380-X
One ferrite:	In HiPath 3750 and HiPath 3700 systems only (article number C39022-Z7000-C7)
IVM software:	HE100V.01.1xx or higher (P50038-P0100-A1-*)
PBX hardware:	HiPath 3000 V1.2 with controller (CBCPR, CBCC, CBCP, CBRC, CBRP)
System software:	HiPath 33x0: ab HE550U.53.7xx (P30370-P856-A610-*) HiPath 35x0: ab HE550T.53.7xx (P30370-P857-A610-*) HiPath 37x0: ab HE550S.53.7xx (P30370-P855-A610-*)
HiPath 3000 Manager E:	HA550B.53.xxx or higher (P50038-P1510-A1-*)

Table 3-1 Installation Requirements

* The fourth block of the article number must be taken from the approval documentation.

3.2 Installing Ferrites (to HiPath 3750 and HiPath 3700 systems only)

A ferrite (article number C39022-Z7000-C7) must be attached to the cable (SIPAC plug) that leads away from the module installed to the left of the IVML24 or the IVML8. If the slot directly to the left of this module is empty, the ferrite must be attached to the cable of the first module to the left. The cable needs to be led only once through the ferrite (no loop)

3.3 Hard Disk Shipping Brace

The hard disk shipping brace must be removed before the IVM module is installed to the HiPath 3000.

If the IVM module is subsequently removed from the system and shipped, the shipping brace must be reinserted.

3.4 Power-Up

Software and languages (voice prompts / system announcements) are pre-installed to the IVM module. After installing the IVM module, the system is started according to the following sequence:

Yellow LED	Green LED	Phase	Significance	Duration	Required Action
Off	Off	1	Boot procedure	12 s	
On	On	2	LED test, (reload option) Press four times (Off-On-Off-On) to reload the module. (see section 3.5).	10 s	
Disabled: on Enabled: off	Off	3	Disable switch status is indicated with the yellow LED.	5 s	Check to see if the module has been deactivated by HiPath 3000 Manager E, or with the disable switch.
Blinking (500 ms / 500 ms)	Off	4	Hard disk test and initialization of the application	2 to 5 minutes	
Off	On	5a	Standby mode after power-up has been completed		

Table 3-2 LED Signaling During Power-Up

Yellow LED	Green LED	Phase	Significance	Duration	Required Action
On	Off	5b	Module is disabled or a module error has occurred.		Check to see if the module has been deactivated by HiPath 3000 Manager E, or with the disable switch. Replace module if defective.

Table 3-2 LED Signaling During Power-Up

The disable switch can be activated at any time during power-up, for example, if disabling is indicated during phase 3 (see table: LED Signaling during Power-Up). Switching status is indicated after power-up has been successfully completed, and during phase 3. Switching status is not indicated during the hard disk test or during initialization of the application (phase 4).

3.5 Reload Option

The IVM can be returned to its factory default settings by executing a reload. All customer data saved to the IVM is irretrievably lost in this case (mailboxes, messages, announcements).
This procedure is unnecessary for an IVM that has just been received from the factory and has not yet been used. Reload is only advisable for IVM modules with an unknown status.

Reload is started by activating the disable switch four times (Off-On-Off-On) during the LED test (phase 2 as described in section 3.4, “Power-Up”). The LED test is aborted in this case, and both LEDs blink for about 5 seconds to acknowledge reloading.

Yellow LED	Green LED	Phase	Significance	Duration	Required Action
On	On	2	LED test, [reload option]	10 s	
Blinking	Blinking	2a	Reload acknowledgement	5 s	

Table 3-3 LED Signaling for Reload Procedure

After reloading has been completed, power-up is initialized, beginning with phase 1 (as described in section 3.4).

4 Administration

The time required for configuring the HiPath 3000 system with IVM depends to a great extent upon the size and the complexity of the customer's telephone system, as well as the desired IVM functions. Thus, the following points should be discussed with the customer before installation:

- Required languages (voice prompts)
- Extension number assignments for mailboxes with names
- Mailbox classes, mailbox privileges (COS)
- Greeting control (day and nighttime operation)
- AutoAttendant mailboxes and corresponding speed dialing destinations
- Information mailboxes

The following parameters are preconfigured by the system, but can be adapted to customer requirements, if requested:

- Language 1 = German, Language 2 = English, Language 3 = French
- Number of messages which can be saved per mailbox (default: 5 messages)
- Maximum message length (default: 2 minutes)
- Mailbox password length (default: 4 digits)
- Announcement of the caller's number (default: no announcement)
- Number of notification call attempts (default: 3 attempts)
- Repetition interval for notification call attempts (default: 15 minutes)

Administration via HiPath 3000 Manager E is described in the following sections. For clarity, administration has been subdivided into the conventional setup (system configuration) and the extended IVM configuration. The chapter "System configuration" in section 4.3 does not include a complete description; it only addresses special IVM features.

4.1 Version Query

It is advisable to query the IVM software version after power-up:

> Dialog box: “File” - “Transmit”

> Select connection to HiPath 3000 version 1.2.

> Select “Maintenance“ and activate.
➨ A connection to HiPath is established. If an IVM has been installed to the HiPath system, the “IVM” tab appears in the "Maintenance" dialog box.

> Select the “IVM” tab under "Maintenance" and click the “Read data” button”.

The following system data now appears on the left-hand side of the window:

Hardware version:	Hardware version from flash memory
Software version:	Software version installed on the hardware
Language 1:	Version of the first voice prompt set
Language 2:	Version of the second voice prompt set
Language 3:	Version of the third voice prompt set
MAC ID:	MAC ID for module
Channels rel.:	Number of usable channels
Activated features:	Display of usable features

Table 4-1 System data on the left-hand side of the window

4.2 Language selection

Several languages are installed in IVM. The mailboxes can function with three which are chosen from this pool.

The mailbox languages are changed as follows:

> Dialog "File” - "Transfer”

> Select connection to HiPath 3000 Version 1.2

> Select "Maintenance" and activate
➨A connection to HiPath will be established. If there is an online IVM in this HiPath system, the “IVM” tab appears in the "Maintenance" dialog box.

> Select the “IVM” tab under "Maintenance" and click the “Read data” button”.

> Activate the button "Language selection“
➨ A new dialog appears. The available languages are displayed on the left . Drag and drop the desired languages to the right area.

> Select the languages

> Activate the button "Set active languages“
➨ A message box will appear confirming data transfer.

4.3 System Configuration

Due to the fact that the IVM takes data from the CDS of the system, the system is set up first and then the IVM. Refer to the HiPath 3000 version 1.2 service manual regarding system configuration, as required. Only subject matter with relevance to the IVM is included below.

4.3.1 USBS Parameters

To assure high speed data exchange with the IVM module and short transmission times, the X and Y parameters should be checked and set to at least the following values: X = 200, Y = 200. These two parameters determine data throughput for USBS flow control. They can be adjusted in the “Line / network” dialog box under “ISDN parameters” in the USBS group using the increase and decrease buttons.

It is to be made certain that the call number parameters (internally call number, DID call number) were set before writing in the database.

4.3.2 User Extension Numbers

Users should be set up complete with their names; this applies to virtual users as well (pseudo user = user extension number without telephone). The IVM perceives users with names as existent and displays them in various selection lists.

The internal extension number is decisive for the assignment to a mailbox. However, it is advisable to always use identical internal and direct-dial extension numbers.

Mailbox names only contain alpha-numeric characters. The characters „>“ and „<“ may not be used.

4.3.3 Privileges for IVM Ports

The voice mail ports are S0 users who accept, initiate and forward calls (via call-back, outgoing external and internal dialing and hang-up), depending on the functionality used. The relevant privileges must therefore be configured correspondingly (dialing privilege, ITR groups, system feature “transit” etc.).

This is generally ensured by the default configuration.

4.3.4 IVM Group Line

Assignment of IVM ports/users to a group line is absolutely essential because call switching and call forwarding are executed via the group line extension number. The group line type must be “Cyclic”.

All IVM ports/users should always be assigned to a group line.

However, each IVM port/user may only be assigned to a **single** group line, i.e., the assignment of the port’s extension number to a group line must be unambiguous.

4.3.5 Call Management

A call destination list must be set up for the IVM ports with the IVM group line extension number as the first item in this list.

Call management must be set up correspondingly for users with a mailbox (call forwarding to the IVM group line). This is the call forwarding destination in the event of no answer or busy.

If need be, the user has to activate call forwarding on the telephone.

The “Different day and night phone mail announcement” feature, which can be activated via the HiPath 3000 Manager E with the “Flags” item under “System parameters”, also functions for the IVM.

4.3.6 Message Waiting Options

Acoustic signaling and displays on Optiset telephones can be configured system-wide regarding “Message waiting indication” (MWI).

> Suppress the “Message waiting” display on Optiset phones in the “System parameters” dialog box under “Display”.

> Group “Switch” - checkbox “Display for information message”
➨ Deactivation suppresses this display. Default setting: display not suppressed.

Acoustic settings can be adjusted separately for Optiset and non-Optiset equipment:

- Announcement “You have a message” as special dial tone (with HiPath 37x0 systems only)
- Special dial tone
- Normal dial tone

> “System parameters” dialog box under “PlusProduct flags / touch-tone”

> “Acoustic message indication” group
➨ Selection is accomplished with the help of radio buttons. The default setting for Optiset phones is “Special dial tone”. For all other non-Optiset equipment the default setting depends on the system, i.e., “Announcement” for a HiPath 37x0 and “Special dial tone” for all other systems.

4.3.7 Central Voice Mail / Networked Systems

Central voice mail is only possible with closed numbering or unique extension numbers.

A virtual user of the type “phone mail” must be set up in the networked systems. Call forwarding to the IVM group line must be activated (activation by associated dialing). Call switchings or forwardings of users within the networked system must lead to the corresponding virtual user.

4.4 IVM Configuration

Configuration is executed in the same way one would set up a CDS, i.e., after parameters have been entered or changed in the individual dialog boxes under “Settings”, they are transmitted to the system along with the CDS.

In the sections that follow, it will be assumed that the procedure for CDS transmission is known and will no longer be mentioned.

If a mailbox currently being used is accessed during IVM configuration, a message is played back to the user and he is disconnected from his mailbox.

4.4.1 General Parameters

“General” parameters are system-wide settings applying to the IVM:

- Maximum mailbox extension number length:
  This setting defines the maximum length of mailbox extension numbers.
  Setting range: 1 to 8 digits. The default setting is 3 digits.
- Maximum message length (in seconds):
  The maximum time made available to the caller for recording his message.
  Setting range: 1 to 1200 seconds. The default setting is 120 seconds.

Selecting a high value results in excessive use of overall recording capacity.

- Minimum message length (in seconds):
  This is the minimum connection time during which message recording must be started.
  Setting range: 1 to 10 seconds. The default setting is 1 second.
- Number of messages which can be saved per mailbox:
  This is the number of messages a user can save.
  Setting range: 1 to 255 messages. The default value is 5 messages.

Selecting a high value results in excessive use of overall recording capacity.

- Mailbox password length:
  This parameter specifies how many characters the user must enter as a password.
  Setting range: 3 to 8 characters. The default value is 4 characters (does not apply to the super users whose password comprises 8 digits).
  Default mailbox password: 1 2 3 4

- Time until help announcement (in seconds):
  Specifies the duration until the help announcement is played back, if the user has opened his or her mailbox but has made no further key activations.
  Setting range: 1 to 5 seconds. The default value is 3 seconds.
- Help announcement repetitions:
  The help announcement is repeated as often as specified by this setting.
  Setting range: 1 to 5 repetitions. The default value is 3 repetitions.
- Number of notification call attempts (user outcall):
  If the user has set up a notification call, the IVM attempts to establish a connection to the entered phone number, and repeats this attempt as often as specified by this setting, or until the user has listened to the message.
  Setting range: 1 to 255 attempts. The default value is 3 attempts.
- Repetition interval for notification call attempts (in minutes):
  This is the time interval between attempts to place the notification call. It is issued until the outcall has been acknowledged. The IVM repeats its attempt to place the notification call until the user answers, or until the maximum number of attempts has been executed.
  Setting range: 1 to 60 minutes. The default value is 15 minutes.
- Standard language:
  This parameter effects the selected language when a mailbox is first configured.
  Setting range: language 1 ... 3. The default setting is language 1.
- Announcement of the caller's phone number:
  When the user listens to his or her mailbox messages, the caller's telephone number is either announced or suppressed.
  Default setting: announcement is suppressed.

The "General" parameters are set in such a way that they usually need not be changed (except for maximum mailbox extension number length and the standard language). Proceed as follows, if required:

> Select "Settings" - "Auxiliary equipment" - "Integrated Voice Mail (IVM)"

> Click the "Additional settings" button.

> Select "General".

The network parameters appearing on the right-hand side of the dialog box are described in section 4.4.7, "LAN Access".

4.4.2 Setting Up Mailboxes

For the most part, mailboxes are set up with the help of a table:

> Select “Settings” - "Auxiliary equipment" - "Integrated Voice Mail (IVM)"

The parameters for each individual mailbox are administered here. A mailbox is deemed existent as soon as a mailbox extension number has been entered.

The mailbox class, or class of service (COS), defines the mailbox functions :

COS 1 Basic mailbox / information mailbox
- One greeting
- Message recording
- Message deletion

COS 2 Standard mailbox
- Same as COS 1 plus:
- Three greetings
- Message storage and forwarding
- Recording of the user’s name

COS 3 Preferred mailbox
- Same as COS 2 plus:
- Notification call (out call)
- Place call to message originator
- Private message

COS 4 Exclusive mailbox
- Same as COS 3 plus:
- Deputy function
- Selection of voice prompt language

COS 5 Standard AutoAttendant mailbox
- Same as COS 4 plus:
- 10 speed dialing destinations, mailbox interlinking

COS 6 Preferred AutoAttendant mailbox
- Same as COS 4 plus:
- Four greetings
- Greeting control (day-night control)

4.4.2.1 Initial Configuration

It is possible for initial configuration (i.e., as long as no changes have been made to the table) to allocate a mailbox with default values (extension number and name from the system, default COS is 4) to users of the HiPath system, both active or with an assigned name:

> Select “Settings” - "Auxiliary equipment" - "Integrated Voice Mail (IVM)"

> Click the “Accept user mailbox data” button.

This button is renamed after this action has been completed, if other changes are made or after a CDS has been loaded containing IVM data.

Whether it makes more sense to transfer CDS data in this way and to delete unwanted entries, or to make all required entries manually, must be decided on a case-by-case basis.

4.4.2.2 Mailbox Parameters

- Mailbox extension number:
  The mailbox extension number identifies the mailbox and is determined from “redirecting info” for switched calls and from the “calling party number” for direct calls. Existing or virtual user extension numbers, or user numbers from networked systems, can be used as mailbox extension numbers. The extension number can be taken from the CDS for initial configuration (see section 4.4.2.1); it will then be independent of the extension number in the CDS. When changing an extension number, this could necessitate adjustments in two places.
- Name:
  This name can be taken from the CDS for initial configuration; it will then be independent of the name in the CDS. Any other name can be used here as well. Personnel changes could necessitate changing the name in two places.
- COS:
  The class of service determines the basic functions available for a mailbox (see also section 4.4.2, “Setting Up Mailboxes”).
  Setting range: COS 1 to COS 6. The default value is COS 4.
- Param:
  After double-clicking this field, additional mailbox-specific parameters appear. The following parameters can be configured in the “Mailbox parameters” dialog box, depending on the mailbox’s COS designation:
  - Information mailbox:
    Only COS 1 mailboxes can be set up as information mailboxes. Information mailboxes allow the caller to navigate within the mailbox greeting with the touch-tone keys at his telephone (5 seconds fast forward, 5 seconds rewind, pause, and repeat greeting).

- Language:
  Either language 1, language 2 or language 3 can be selected for all COS 4 through COS 6 mailboxes. COS 1 through COS 3 mailboxes use the set standard language. The default setting is language 1.
- Greeting control:
  Greeting control can be influenced here for COS 6 AutoAttendant mailboxes. One of the following can be selected:
  - Day/night: night operating status of the HiPath system
    One of the following greetings is used, depending on the system's night operating status:
    1) Day: first greeting in the AutoAttendant mailbox
    2) Night: second greeting in the AutoAttendant mailbox
    The following is valid for day/night operation:
    If the caller does not press a key during the greeting for call transfer, the caller will be transferred to „Intercept Day“ during the day, and to "Intercept Night" at night.
  - Manual: Manual selection of the greeting. The user selects one of four greetings for continuous use in this case.
    The following is valid for manual operation:
    If the caller does not press a key during the greeting for call transfer, the caller will be transferred to „Intercept Day“.

4.4.2.3 Setting Up Mailboxes using Templates

Setting up the IVM can be simplified significantly by copying the configuration of one mailbox to other mailboxes. For this, one mailbox is completely configured as described in section 4.4.2.2, “Mailbox Parameters”.

> Select “Settings” - "Auxiliary equipment" - "Integrated Voice Mail (IVM)"

> Double-click the “Param” field.
➨ The “Parameters” dialog box appears.

> Click the “Use template settings” button.

> Return to the “IVM” dialog box by clicking OK.

> Select the mailboxes to which the parameter settings are to be copied.

> Click the “Accept template settings” button.

Settings are copied from “COS” and “Param” to the selected mailboxes. The settings for “Mailbox extension” and “Name” remain unchanged.

It is advisable to create a template for each mailbox class because allowable “Param” settings depend on the COS designation.

4.4.2.4 Checking Entries

The individual entries are checked for consistency. The primary objective is to discover any possible extension number conflicts.

Checking is performed as follows:

> Select “Settings” - "Auxiliary equipment" - "Integrated Voice Mail (IVM)"

> Click the “Check” button.

If errors have occurred, a new window appears with notes concerning troubleshooting.

Testing is also conducted automatically when the dialog box is exited by clicking the “OK” button, as well as when the “Accept” button is activated. The dialog box cannot be exited until all inconsistent data has been corrected.

4.4.2.5 Renaming Mailboxes (changing extension numbers)

Mailboxes are renamed by simply overwriting the old mailbox extension number with a new one after selecting “Settings” - "Auxiliary equipment" - "Integrated Voice Mail (IVM)". Existing messages and greetings remain intact, although they can be deleted, if desired, with the “Initialize mailbox” function under "Maintenance".

4.4.2.6 Deleting Mailboxes

Mailboxes are deleted by deleting the corresponding mailbox extension number after selecting “Settings” - "Auxiliary equipment" - "Integrated Voice Mail (IVM)". After acknowledgement (with “OK” or “Accept”), a warning appears indicating that all mailbox settings and messages will be lost.

4.4.3 AutoAttendant Mailboxes

AutoAttendant mailboxes are COS 5 or COS 6 mailboxes. COS 5 and 6 mailboxes are distinguished by the fact that switching and interlinking to other mailboxes or users is made possible with the speed dialing function (speed dialing numbers 0 through 9). In this way, for example, menu-driven selection of an announcement language can be realized. Additionally, 1 or 2 (COS 6 with Day/Night greeting control) intercept destinations can be defined.

After the AutoAttendant mailbox has been set up by assigning the corresponding COS designation, the greeting must be recorded. The recorded mailbox greeting is played back to the caller as an announcement.

4.4.3.1 Interlinking Mailboxes

The caller must always first dial into an AutoAttendant mailbox that allows him to switch to another mailbox via speed dialing (speed dialing numbers 0 through 9). This mailbox may also be an AutoAttendant mailbox, allowing for the realization of multi-level applications. Destinations other than AutoAttendant mailboxes always represent end-points within the interlinked system.

Configuration is executed as follows:

> Select “Settings” - "Auxiliary equipment" - "Integrated Voice Mail (IVM)"

> Click the “Additional settings” button.

> Select “Automatic call switching”.
➨ All AutoAttendant mailboxes (COS 5 and COS 6) are displayed under “Mailbox extension number / name” , all known users appear under “Users” and all known mailboxes are listed under “Installed mailboxes”.

> a) Speed dialing destinations can be selected from the “Users” and “Installed mailboxes” lists via drag & drop. The destination type is automatically set to „Call number“ or "Mailbox", or

> b) Speed dialing numbers can be entered directly. In this case, the type of destination should be set to either „Mailbox“, „Call number“ or „CO (ext.)“. „Call number“ can be either an internal or external number, „CO (ext.)“ will activate an outside line before dialing the entered number.

Speed dialing destinations can be deleted from an AutoAttendant mailbox by dragging them to the trashcan icon and dropping them.

If the extension number of a further AutoAttendant mailbox has been entered as a speed dialing destination, the second mailbox can be accessed directly by double-clicking the appropriate field.

It is not possible to exit the dialog box before all entries have been completed (for example, if an extension number has been entered manually without assigning a type).

4.4.3.2 Automatic Information Services

Automatic information services can be set up by interlinking AutoAttendant mailboxes, with information mailboxes as end-points. Setup is performed as described in section 4.4.3.1. As a special feature, a speed dialing number from the AutoAttendant mailbox can direct the caller to an information mailbox (COS 1), which allows for longer announcements, as well as browsing within the announcement.

Select “Settings” - "Auxiliary equipment" - "Integrated Voice Mail (IVM)" to find CSO 1 information mailboxes.

4.4.3.3 Handling intercept/ system mailbox

To prevent loss of calls which haven been, for example, intercepted to the IVM for which no mailbox exists, a "system" mailbox can be configured.

To do this, set up a mailbox (preferably AutoAttendant) for the group line of IVM ports / extensions. In the case that a call is transferred to a destination with no mailbox, the IVM will search for this special mailbox and, if found, will process the call there.

If the IVM ports are distributed among several group lines, several system mailboxes are possible.

Further functionalities are possible if the system mailbox is set up correspondingly. By deactivating the message recording function, for example, and forwarding the call via speed dialing / intercept destinations (see section 4.4.3.1), a call can be sent to the central switchboard mailbox. This has the advantage that recording and signaling takes place at the switchboard.

4.4.4 Information Mailboxes

The special features of the information mailbox can be used to establish an announcement service. Special features of the information mailbox are:

- Maximum greeting length of 20 minutes
- The caller is able to navigate within the greeting.

Information mailboxes can only be set up via the HiPath 3000 Manager E. They allow the caller to navigate within the mailbox announcement with the help of the touch-tone keys at his or her telephone (5 seconds fast forward, 5 seconds rewind, pause, and repeat greeting).

Generally, any COS 1 mailbox can be configured as an information mailbox. Virtual users are utilized for this.

To set up an information mailbox, the “Information mailbox” checkbox must be activated under “Parameters”.

After the information mailbox has been set up, the greeting is recorded via the mailbox functions. The recorded mailbox greeting is played back to the caller as an information announcement.

4.4.5 Guest Mailboxes

Guest mailboxes are characterized by the fact that an actual telephone is not assigned to the mailbox, but rather only a virtual user. Thus any mailbox can generally be used as a guest mailbox. Messages can be played back on any telephone, including external phones.

4.4.6 Central Voice Mail with Networked Systems

A central voice mail is defined as a voice mail in a networked system. The IVM is located in one of these systems where it can only be administrated. This system does not know the extension numbers of the other networkd systems. The numbers can, therefore, not be taken from the CDS for configuration purposes.

This means that, when configuring IVM, the HiPath 3000 Manager E can only offer entry support (copying of extention numbers) for the specific system where the IVM is physically inserted. All mailboxes of connected systems must be set up individually (affected dialogs: mailboxes and AutoAttendant).

4.4.7 LAN Access

Network parameters must be configured for backup and restore, as well as software upgrades via LAN:

- IP address:
  Setting range: 0.0.0.0 to 255.255.255.255. The default value is 192.168.1.2.
- Subnet mask:
  Setting range: 0.0.0.0 to 255.255.255.255. The default value is 255.255.0.0.
- Gateway IP address:
  Setting range: 0.0.0.0 to 255.255.255.255. The default value is 192.168.1.1.
- Permissible LAN access:
  For security reasons, selection can be made allowing for direct FTP access and/or TFTP access via LAN. Both types of access are disabled in the default configuration.

Setup is accomplished as follows:

> Select “Settings” - "Auxiliary equipment" - "Integrated Voice Mail (IVM)"

> Click the “Additional settings” button.

> Select “General”.

5 Final Testing

After completing the administration procedures, the IVM should be configured in such a way that it correctly presents each user with additional setup options for configuring his or her own mailbox from his or her telephone. The system is ready to receive calls when the yellow LED is off and the green LED is on.

Final testing of the fully configured IVM module is performed by placing test calls and querying the mailboxes.

The default mailbox password for newly configured mailboxes is 1 2 3 4 ... (depending on the specified mailbox password length).

5.1 Normal Mailbox

1. Activate the mailbox with the mailbox controls. Call the IVM group line extension number and enter the password and the mailbox extension number, if required. Message recording is then enabled.
2. Set up call switching and call forwarding to the IVM group line.
3. Call the extension number for the activated mailbox from an internal as well as an external phone, and check to see whether or not the call is switched to the right mailbox (the greeting text for the corresponding mailbox can be heard).
4. Record a message after the greeting has been played back. Check to see whether or not message waiting indication is activated.
5. Call the IVM group line extension number and enter the password and the mailbox extension number, if required. Check date and time for the recorded message and then delete the message. After the last message has been played back, the MWI function at the corresponding telephone should automatically be deactivated.

5.2 Notification Call

The notification call (user outcall function included as of COS 3) should be tested for at least one mailbox. The following steps must be executed for this:

1. Call the IVM group line extension number.
2. Enter the password and the mailbox extension number, if required.
3. Select the “Notification call number” function by repeatedly pressing the 3 key. If a notification call number is being set up for the first time, the “No notification call number has been entered” message is played back.

4. After pressing the 0 key, the telephone number can be entered to which notification calls should be placed. Press the # key after entering the number.
5. In order to change to the function for activation of the notification call, press the 1 key. The “Notification call is deactivated” message is played back.
6. The notification call function is activated by pressing the 0 key, which is acknowledged with an appropriate announcement.
7. All mailbox functions are exited by hanging up.
8. After leaving a message at the mailbox, a notification call is made to the previously entered number.
9. After answering the notification call and entering the mailbox password, delete the recorded message and deactivate the notification call function (delete the notification call number if necessary).

5.3 AutoAttendant

5.3.1 Speed Dialing Destinations

1. Call the IVM group line extension number.

2. Enter the password and the AutoAttendant mailbox extension number, if required.
3. Select the “Speed dial <0> ...” function by repeatedly pressing the 3 key. If a speed dialing number is being set up for the first time, the “No speed dialing destination” message is played back.
4. Press the 0 key.

   a) If no speed dialing destination exists: After being requested to do so, enter the speed dialing destination phone number. Press the # key after entering the number.

   b) If a speed dialing destination already exists: Press the * key (change number) and enter the new speed dialing destination phone number after the prompt. Press the # key after entering the number.

   Mailbox as speed dialing destination:

   If a mailbox is to be entered as a speed dialing destination, enter # followed by the mailbox extension number.

5. All mailbox functions are exited by hanging up.

6. **Call the AutoAttendant mailbox. The call is switched to the selected destination by pressing the corresponding speed dialing number <0> during the greeting.**

   Mailbox as speed dialing destination:

   Call the AutoAttendant mailbox. The caller hears the current mailbox announcement after pressing the corresponding speed dial number <0> during the greeting.

7. **Delete the speed dialing destination number, if necessary, after completing this test.**

5.3.2 Call Forwarding to an Extension Number

Call the AutoAttendant mailbox and enter the desired extension number during the greeting. The AutoAttendant mailbox switches the call to the entered extension number.

5.3.3 Call Switching to a Mailbox

Call the AutoAttendant mailbox and press the * key twice during the greeting, and then enter the extension number of the desired mailbox. The AutoAttendant mailbox switches the call to the corresponding mailbox and the current announcement is played back to the caller.

5.4 Finishing Up

After final testing of the IVM has been successfully completed, an IVM system administrator should be trained, if necessary. Beyond this, instruction for administration with the super user function should be provided as well (see user manual).

6 Troubleshooting and Maintenance

6.1 LED Indicators During Operation

Yellow LED	Green LED	Description	Required Action
Off	On	Idle (no calls)	
Off	Blinking (500 ms / 500 ms)	At least one active port (call)	
Blinking (500 ms / 500 ms)	Blinking (500 ms / 500 ms)	Disable switch activated during a call	
On	Off	Module disabled or module error has occurred	- Check to see if the module has been deactivated by HiPath 3000 Manager E, or via the disable switch. - Replace module if defective.

Table 6-1 LED Indicators During Operation

6.2 Frequently Asked Questions

Symptom	Cause	Remedy
No connection to the IVM can be established .	The module is defective.	Replace the module.
	All available IVM channels are busy.	Review statistics to see if the channels are busy. If a IVML8 module is used, it should be replaced by an IVML24 module.
	The module is disabled.	Set the disable switch back to the enable positions and/or cancel disabling via the HiPath 3000 Manager E.
Mailbox does not respond.	Mailbox has not been set up.	Set up a mailbox for the corresponding extension number via the HiPath 3000 Manager E.
	Call switching or forwarding to the IVM group line extension number has not been set up for a given extension number.	Set up call switching or forwarding for the corresponding extension number (call destination lists > 2nd destination = IVM group line extension number).
Message recording is not possible. The caller hears the mailbox greeting, after which the call is released.	The mailbox was not activated after it was set up. Note: Message recording is always deactivated after initial installation.	Call the mailbox and enter the mailbox password to gain access to mailbox control.
	Message recording is deactivated for the mailbox.	Call the mailbox and enter the mailbox password to gain access to mailbox control, and then activate message recording.
Message recording is not possible. The caller hears the following message after the greeting: “Message recording is not possible at the moment”.	No more recording capacity (total 100 hours)	Delete old messages.

Table 6-2 Frequently Asked Questions

Symptom	Cause	Remedy
Mailboxes cannot be set up by the super user. The system administrator hears the following message: “No more mailboxes can be set up”.	The maximum number of mailboxes has already been set up.	Delete unnecessary mailboxes.
A mailbox does not include all desired features.	The wrong COS setting has been configured.	Change the COS setting for the affected mailbox.
The mailbox cannot be controlled with certain telephones.	Touch-tone signals are not recognized.	Activate the touch-tone function in the HiPath system.
Message waiting indication remains active at telephone.	New messages have arrived, or previous messages have not yet been played back.	MWI remains active until all new messages have been played back.
Long messages are truncated.	Maximum message recording duration has been exceeded during recording.	Increase maximum message recording duration via the HiPath 3000 Manager E.
AutoAttendant mailboxes (COS 5 or 6) cannot be set up by the super user. The system administrator hears the following message: “No more mailboxes can be set up with this class of service”.	The maximum number of mailboxes has already been set up.	Delete unnecessary AutoAttendant mailboxes.
Attempted log-in via FTP results in the following error message: “Could not open host ...., user name and/or password was not accepted for log-in”.	FTP password or FTP user name was entered incorrectly, or the user group is incorrect.	Enter the correct FTP password and/or FTP user name.
Attempted log-in via FTP results in the following error message: “Remote host has closed the connection”.	FTP access is not activated in the HiPath 3000 Manager E.	Activate FTP access in the HiPath 3000 Manager E.

Table 6-2 Frequently Asked Questions

6.3 The Log File

6.3.1 General

Administrative events are recorded in chronological order at the IVM in the log file. These events (ACTION events) can be generated by administration activities (ADMIN events), using the HiPath 3000 Manager E, the super user, or via LAN. The log file maintains up to 4000 past events in a compressed data format.

There are two different types of events:

- ADMIN: Initiation of administrative activities via the HiPath 3000 Manager E, the super user or the LAN (FTP / TFTP)
- ACTION: An operation initiated by the active administrator.

Each event starts with a data and time entry. The initiated operation is then recorded. Under certain circumstances, additional information regarding the recorded ACTION events may follow this entry.

6.3.2 Evaluating the Log File

The recording of an ADMIN event identifies the beginning of administrative activities via one of the three possible modes (HiPath 3000 Manager E, super user or LAN). As of this point in time, all ACTION events which are executed by the administrator are recorded to the log file.

Entry of a new ADMIN event to the log file identifies the beginning of new administrative activities. All ACTION events are thus associated with the preceding ADMIN event.

If several identical ACTION events occur, the first 5 are recorded individually, and the rest are recorded in summary only.

The following example shows all four types of ADMIN event:

```
<LogEvent>
<Time>2001-08-31T04:05:48</Time>
<Admin>Assistant</Admin>
</LogEvent>

<LogEvent>
<Time>2001-08-31T04:05:48</Time>
<Admin>SuperUser</Admin>
</LogEvent>
```

<LogEvent>
<Time>2001-08-31T04:05:48</Time>
<Admin>Ftp</Admin>
<LoginName>1234</LoginName>
<PasswordClass>1</PasswordClass>
</LogEvent>

<LogEvent>
<Time>2001-08-31T04:05:48</Time>
<Admin>Tftp</Admin>
</LogEvent>

The general layout of an ACTION event is the same as is also the case for ADMIN events:

<LogEvent>
<Time>.....</Time>
<Action>.....</Action>
<“Parameter”>.....</“Parameter”> Further parameters depend upon the event.
</LogEvent>

Various samples of ACTION events are depicted below. For purposes of simplification, the <LogEvent> frame and the time stamp have been omitted in the following examples:

<Action>Creating mailbox</Action> <MbNo>103</MbNo>	Mailbox actions
<Action>Deleting mailbox</Action> <MbNo>104</MbNo>	
<Action>Changing mailbox</Action> <MbNo>105</MbNo>	
<Action>Renaming mailbox</Action> <MbNo>106</MbNo>	
<Action>Changing common data</Action>	Change general settings
<Action>Initialising mailbox</Action> <MbNo>100</MbNo>	Initialize a mailbox

<Action>Reset mailbox password</Action> <MbNo>102</MbNo>	Reset a mailbox password
<Action>File transfer</Action> <FileName>ivm_para.xml</FileName>	Transfer a file to the IVM
<Action>Introducing restore</Action>	Start restore
<Action>Introducing backup</Action>	Start backup
<Action>Introducing upgrade</Action> <SwitchPoint>2001-08-10T03:00:00</Switch-Point>	Start software upgrade
<Action>Changing super user password</Action>	Change the super user password
<Action>Activating SW lock</Action>	Disable IVM via software lock
<Action>Deactivating SW lock</Action>	Enable IVM by releasing the software lock
<Action>Activating HW lock</Action>	Disable IVM with disable switch
<Action>Deactivating HW lock</Action>	Enable IVM by releasing disable switch

6.3.3 Reading Out the Log File

The log file is read out via the HiPath 3000 Manager E.

> Dialog box: “File” - “Transmit”

> Select connection to HiPath 3000 version 1.2.

> Select „Maintenance“ and activate.
➨ A connection is established to the HiPath system. If an IVM has been installed to the HiPath system, the “IVM” tab appears in the "Maintenance“ dialog box.

> Select the “IVM” tab under "Maintenance“.

> Activate the “Execute file operations” button.

> Select “LOG” in the “Read file” field.
Specify the name of the file to which the log file should be saved at the PC.

> Click the “Read: IVM --> PC” button.
The log file is read out and is then available at the PC in compressed data format (.xml.gz).

6.4 The Trace File

Activities occurring within each mailbox are recorded to the trace file (save or delete messages, notification, signalling etc.). Information such as mailbox extension numbers, date and time, touch-tone sequences etc. are recorded in compressed data format

The trace file is read out via the HiPath 3000 Manager E.

> Dialog box: “File” - “Transmit”

> Select connection to HiPath 3000 version 1.2.

> Select „Maintenance“ and activate.
➨ A connection is established to the HiPath system. If an IVM has been installed to the HiPath system, the “IVM” tab appears in the "Maintenance" dialog box.

> Select the “IVM” tab under "Maintenance".

> Activate the “Execute file operations” button.

> Select “TRACE” in the “Read file” field.
➨ The IVM now informs the HiPath 3000 Manager E of the possible time span for which a trace file can be generated.

> Specify the name of the file on the PC to which the trace file should be saved.

> Select the desired time span.

> Click the “Read: IVM ➨ PC” button.
➨ The IVM now indicates the size of the trace file. The user is thus able to determine the approximate time which will be required for data transfer. At this point, data transmission can be aborted, or transfer can be started.

The trace file is read out and is then available on the PC in archive format (*.tar). Compressed trace files for each day are stored to this archive (*.xml.gz).

The TRACE file can contain also CORE files, which log the last SW status in the case of an error (post mortem dump). CORE files helps the development for the error analysis.

6.5 Initializing Mailboxes

If an existing mailbox is assigned to a new user, it is advisable to delete any existing messages, greetings, user names and speed dialing destinations, and to reset the password to its default setting. This is accomplished through mailbox initialization.

After initialization, mailbox recording is activated, and the deputy function and the notification call are deactivated.

Mailbox name and COS remain unchanged, although they can be changed with the administration function, if required.

Mailboxes are initialized as follows:

> Dialog box: “File” - “Transmit”

> Select connection to HiPath 3000 version 1.2.

> Select "Maintenance" and activate.
➨ A connection is established to the HiPath system. If an IVM has been installed to the HiPath system, the “IVM” tab appears in the "Maintenance" dialog box.

> Select the “IVM” tab under "Maintenance" and activate the “Read data” button.
➨ The required list of existing mailboxes is transmitted along with the version data (the list is not displayed at present).

> Click the “Initialize mailboxes” button.
➨ A new dialog box appears at which all existing mailboxes are displayed in the left-hand field. Mailboxes can be dragged and dropped or double-clicked into the right-hand field, which displays all mailboxes to be initialized.

> Select the desired mailboxes.

> Activate the “Initialize mailboxes” button.
➨ A message appears confirming data transfer.

6.6 Resetting Mailbox Passwords

If a user forgets his or her mailbox password, it can be reset to its default setting.

Mailbox passwords are reset as follows:

> Dialog box: “File” - “Transmit”

> Select connection to HiPath 3000 version 1.2.

> Select "Maintenance" and activate.
➨ A connection is established to the HiPath system. If an IVM has been installed to the HiPath system, the “IVM” tab appears in the "Maintenance" dialog box.

> Select the “IVM” tab under "Maintenance" and activate the “Read data” button.
➨ The required list of existing mailboxes is transmitted along with the version data (the list is not displayed at present).

> Click the “Reset passwords” button.
➨ A new dialog box appears at which all existing mailboxes are displayed in the left-hand field. Mailboxes can be dragged and dropped or double-clicked into the right-hand field, which displays all mailboxes whose passwords will be reset to the default setting.

> Select the mailboxes.

> Activate the “Reset passwords” button.
➨ A message appears confirming data transfer.

6.7 Changing the Super User Password

IVM administration via the user interface (super user) is protected by an 8 digit password. This password can be changed as follows:

> Dialog box: “File” - “Transmit”

> Select connection to HiPath 3000 version 1.2.

> Select "Maintenance" and activate.
➨ A connection is established to the HiPath system. If an IVM has been installed to the HiPath system, the “IVM” tab appears in the "Maintenance" dialog box.

> Select the “IVM” tab under "Maintenance".

> Activate the “Change super user password” button.
➨ A dialog box appears at which the new password can be entered, followed by reentry for confirmation.

> Enter the password and acknowledge with the “OK” button.
➨ A message appears confirming data transfer.

6.8 Disabling the IVM

Before removing the module or during restricted operation (backup and restore), it may be advisable to disable the module for new calls.

The disable switch function is described it in section 2.2, and in section 3.4. In addition to the disable switch, the IVM can also be disabled using the software. These two functions are independent of each other, i.e., even after the IVM has been enabled with the switch, it may still be disabled by the software. The yellow LED indicates the status of both disable functions.

Querying the disable status:

> Dialog box: “File” - “Transmit”

> Select connection to HiPath 3000 version 1.2.

> Select "Maintenance" and activate.
➨ A connection is established to the HiPath system. If an IVM has been installed to the HiPath system, the “IVM” tab appears in the "Maintenance" dialog box.

> Select the “IVM” tab under "Maintenance" and activate the “Read data” button.
➨ The disable status is indicated in the “Lock” field. The “Software lock on/off” button cannot be activated until after the disable status has been queried.

Changing the disable status:

> Depending on the current status, the IVM can either be disabled or enabled by clicking the “Software lock on/off” button.
➨ The disable status display is refreshed automatically approximately 10 seconds after the disable/enable command has been transmitted, i.e., the status is queried once again.

7 Software and Voice Prompt Upgrades

7.1 General

The IVM is completely inoperable (off-line: green and yellow LED off) during software and/or voice prompt upgrades.

Software and/or voice prompt data transfers do not effect the functions of the IVM and can thus take place during normal operating hours. The time at which upgrades become effective (changeover time) should be outside of normal business hours, and should be coordinated with the system administrator.

System software and voice prompt data files can be installed simultaneously. The IVM need not be disabled for this.

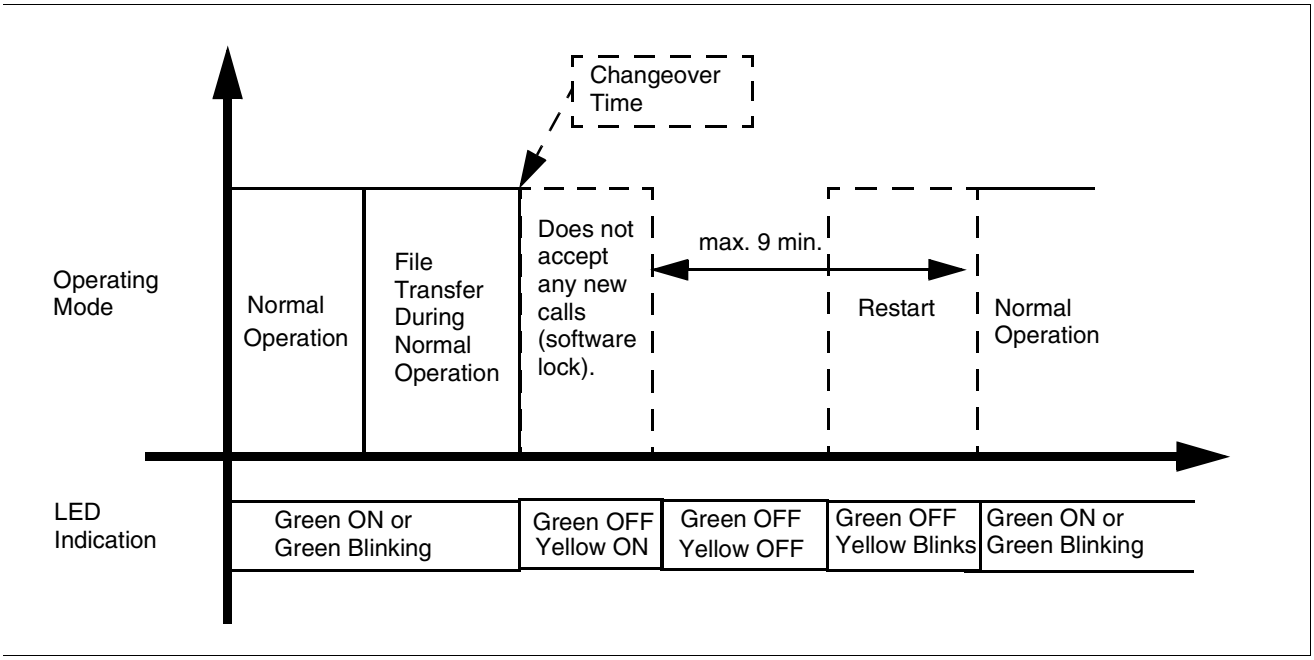

Figure 7-1 Restricted Operation During Upgrades

So-called TAR files are transmitted to the IVM during APS upgrades, as well as voice prompt upgrades. Files are named according to the following convention:

IVMxxyyy.tar	IVM:	Identifies IVM software
	xx:	Identifies release and compatibility
	yyy:	Version number
	.tar:	Archive file
zzzxxyyy.tar	zzz:	Identifies the language of the voice prompt set
	xx:	Identifies release and compatibility
	yyy:	Version number
	.tar:	Archive file

Examples:

IVM01018.tar	IVM SW, release 1.0, version 018
GER01014.tar	German language set, release 1.0, version 014
ENG01012.tar	English language set, release 1.0, version 012

The release entry (xx) is used for compatibility testing. An APS with release 1.0 (xx = 01) can only be updated with voice prompt files with the same release. Version numbers of APS and voice prompt files may, on the other hand, be different.

7.2 APS and Voice Prompt Upgrades

Installation of a new APS version (IVM software) may necessitate the installation of a new voice prompt version and vice versa.

For this reason, current IVM version data must be determined and checked against the new file versions for compatibility before starting the upgrade. Current versions can be queried as described in section 4.1.

A compatibility test is executed before the files are transferred by HiPath 3000 Manager E, which may result in an error message. During this process, the IVM also takes files (with the corresponding format) into consideration, which have already been transferred to the IVM, for example, via LAN.

Due to the fact that the changeover time is in the future, the compatibility test is executed once again before changeover takes place. If incompatibility becomes apparent at this time, an entry is made to the system error memory (error class / error number: 32 / 16).

In order to install APS and/or voice prompt files via the Assistant, the following steps need to be executed:

> Dialog box: “File” - “Transmit”

> Select connection to HiPath 3000 version 1.2.

> Select "Maintenance" and activate.
➨ A connection is established to the HiPath system. If an IVM has been installed to the HiPath system, the “IVM” tab appears in the "Maintenance" dialog box.

> Select the “IVM” tab under "Maintenance".

> Activate the “Read data” button.
➨ Current IVM configuration data are displayed.

> Activate the “Execute file operations” button.

> Select “Upgrade” in the “Write file” field.

> Specify the APS file at the PC which contains the new IVM software.

> If necessary, specify one or two voice prompt files which have been saved to the PC.

> Select a changeover time.

> Click the “Write PC ➨ IVM” button.
➨ The IVM checks to make sure that the specified IVM software matches the selected IVM voice prompt files, or the voice prompt files stored at the IVM, and indicates an error if this is not the case. If no error message appears, HiPath 3000 Manager E calculates the total size of the files to be transferred. The user is thus able to determine the approximate time required for data transfer. At this point, data transmission can be aborted or transfer can be started.

After data transmission has been completed, the IVM activates the new software and any new voice prompts at the specified changeover time. The old software is no longer available after changeover at the IVM.

Mailboxes, greeting texts, messages and system configurations used in the old software are saved.

7.3 Upgrade with LAN Support

Software files and voice prompts can be transmitted via the LAN interface using FTP. The upgrade is activated via the Assistant.

The following steps must be executed for upgrade with LAN support (see also section 10):

1. Rename the software or voice prompt files according to the convention described in section 10.5.
2. Log on to the IVM with a PC or a laptop using FTP.
3. Transfer the software or voice prompt files.
4. In order to activate an upgrade, proceed as described in section 7.2. File names are not specified here, only the changeover time is entered.

8 Backup / Restore

8.1 Backup

The backup function is used to save mailbox data, greetings and any messages left by callers. IVM operating functions are restricted during the backup process.

Callers are only able to listen to greetings in this mode of operation. No messages can be left in mailboxes and no mailbox administration is possible. For this reason, IVM users should be informed that administration functions and message recording will be temporarily interrupted before starting the backup.

Saved data includes mailbox configurations and greetings, as well as saved messages if desired.

The backup file may thus range in size from several kilobytes up to 3 gigabytes, if recording capacity is fully utilized.

The time required for transmission of the backup archive depends upon the transmission speed of the selected transfer path and the size of the archive. In order to reduce the amount of data, the Assistant offers the following options:

- Backup all or only selected mailboxes (including greetings)
- Backup the messages stored in the selected mailboxes

Because mailboxes are backed up one after the other, restricted operation is only effective for each individual mailbox for a short period of time. After each individual mailbox has been saved to the backup archive, it is once again fully operable.

The amount of backup data and file generation time depends to a great extent on the number of mailboxes and their respective messages.

In order to create a backup archive, proceed as follows:

> Dialog box: “File” - “Transmit”

> Select connection to HiPath 3000 version 1.2.

> Select "Maintenance" and activate.
➨ A connection is established to the HiPath system. If an IVM has been installed on the HiPath system, the “IVM” tab appears in the "Maintenance" dialog box.

> Select the “IVM” tab under "Maintenance".

> Activate the “Execute file operations” button.

> Select “BACKUP” in the “Read file” field.
➨ The IVM now informs the Assistant which mailboxes have been set up.

> Specify the name of the file to which the data should be saved on the PC.

> Specify which data should be saved from which mailboxes.

> Click the “Read: IVM ➨ PC” button
➨ The IVM now displays the size of the backup file. The user is thus able to determine the approximate time which will be required for data transfer. At this point, data transmission can be aborted, or transfer can be started. The user can also request the data to be transferred to the IVM for later FTP transfer.

8.2 Restore

The restore function is used to restore mailbox data, greetings and any messages left by callers. IVM operating functions are restricted during the restore process (see also section 8.1).

The restore archive is generated from an already existing backup archive. The time required for transmission of the restore archive depends on the transmission speed of the selected transfer path and the size of the archive. In order to reduce the amount of data, the Assistant offers the following options:

- Restore all or only selected mailboxes (including greetings)
- Restore the messages stored in the selected mailboxes

If mailboxes with identical mailbox numbers exist at the IVM, mailbox data is overwritten, although messages that already exist at the IVM are added to the restored mailbox, assuring that no messages are lost. If the mailboxes to be restored do not exist at the IVM, they are generated during the restore process.

If the “Overwrite” mode is selected for the restore function, all existing mailboxes and their messages are deleted and the system is restored from the archive. Great care must be used with this mode of operation!

In order to execute the restore function, proceed as follows:

> Dialog box: “File” - “Transmit”

> Select connection to HiPath 3000 version 1.2.

> Select "Maintenance" and activate.
➨ A connection is established to the HiPath system. If an IVM has been installed to the HiPath system, the “IVM” tab appears in the "Maintenance" dialog box.

> Select the “IVM” tab under "Maintenance".

> Activate the “Execute file operations” button.

> Select “RESTORE” in the “Write file” field.

> Specify the name of a previously generated backup file from which data will be restored from the PC to the IVM.
➨ The Assistant analyzes the content of the backup file and requests the user to select the desired data.

> Select the data from the backup file that will be restored to the IVM.

> Select “Overwrite”, if appropriate.

> Click the “Write PC ➨ IVM” button.
➨ The HiPath 3000 Manager E generates a file with the name “ivm_res.tar” in the XML directory and displays the size of this file. In this way, the user is able to determine the approximate time required for data transfer. At this point, data transmission can be aborted, or transfer can be started. The user can also request the data to be transferred to the IVM for later FTP transfer.

8.3 Backup and Restore with LAN Support

8.3.1 Backup with LAN Support

The backup file, which may be very large, can be transferred via the LAN interface using FTP.

The following steps must be executed for backup with LAN support (see also section 10):

1. Basically, the same procedure is used as described in section 8.1. When the Assistant asks if transfer should be started, select the FTP-transfer option.
2. Log on to the IVM with a PC or laptop using FTP (see also section 10.3).
3. Transfer the archive file with the name “ivm_bak.tar” from the IVM to the PC or laptop.

8.3.2 Restore with LAN Support

The restore archive generated by the HiPath 3000 Manager E can be transferred via the LAN interface using FTP.

The following steps must be executed for restore with LAN support (see also section 10):

1. To generate a valid restore archive, proceed as described in section 8.2. When the Assistant asks if transfer should be started, select the FTP-transfer option. The Assistant creates a file with the name “vm_res.tar” in the “XML” subdirectory.
2. Log on to the IVM with a PC or laptop using FTP (see also section 10.3).
3. Transfer the archive file with the name “ivm_res.tar” to the IVM.

9 Statistics

9.1 General

The statistics function provides information concerning system utilization, mailbox utilization and busy times for the channels. System utilization information includes general data regarding capacity utilization, greetings and messages. Three additional tables contain mailbox utilization data sorted according to various criteria. The table for channel busy times shows the times during which all available IVM channels were busy, i.e., periods during which traffic levels no longer allowed for free access to the voice mail system.

The Assistant displays the following tab for this purpose:

- System utilization in the “General” tab
- Mailbox utilization data in the following three tabs with max. 25 entries:
  “Sorted according to number of messages”
  “Sorted according to recording time”
  “Sorted according to message age”
- Channels busy table

The “General” tab contains the following data:

- Utilized overall recording time in minutes, and as a percentage of maximum available capacity
- Total number of greetings
- Total duration of greetings in minutes
- Average greeting duration in minutes
- Total number of messages
- Total duration of messages in minutes
- Average message duration in minutes

Each of the three tabs for mailbox utilization data contain a table with identical entries, although the tables are sorted according to different criteria, namely:

- “Sorted according to number of messages”
- “Sorted according to recording time”
- “Sorted according to message age”

Mailbox Extension Number	Total Number of Messages	Number of New Messages	Total Recording Time [h:min]	Last TUI Access on (dd.mm.yyyy)	Newest Message (dd.mm.yyyy)	Oldest Message (dd.mm.yyyy)
100	6	2	05:23	25.09.2001	27.09.2001	22.09.2001
123	4	0	09:12	27.09.2001	27.09.2001	13.09.2001
125	3	1	04:43	26.09.2001	27.09.2001	19.09.2001
…	…	…	…	…	…	…

Table 9-1 Mailbox Utilization Table (with sample contents sorted according to number of messages)

The “Channels busy” tab contains a table which subdivides the day into 24 segments of one hour. Time is shown in minutes, during which all available IVM channels were busy for all segments, i.e., periods during which traffic levels no longer allowed for free access to the voice mail system. The table contains entries for the past 30 days.

Date (dd.mm.yyyy)	0:00 - 0:59	1:00 - 1:59	2:00 - 2:59	…	8:00 - 8:59	9:00 - 9:59	10:00 - 10:59	…	22:00 - 22:59	23:00 - 23:59
26.01.2001	0	0	0	…	1	0	1	…	0	0
25.01.2001	0	0	0	…	0	2	2	…	0	0
24.09.2001	0	0	0	…	1	10	1	…	0	0
…	…	…	…	…	…	…	…	…	…	…

Table 9-2 Channels Busy Table (with sample contents)

This information is required to estimate IVM availability and to add additional channels, if required (replace IVM L8 with IVM L24), to increase availability of the voice mail system for callers!

9.2 Reading Out Statistical Data

In order to query statistics, proceed as follows:

> Dialog box: “File” - “Transmit”

> Select "Maintenance" and activate.
➨ A connection is established to the HiPath system. If an IVM has been installed on the HiPath system, the “IVM” tab appears in the "Maintenance" dialog box.

> Select the “IVM” tab under "Maintenance".

> Activate the “Execute file operations” button.

> Select “STATISTIC” in the “Read file” field.

> Specify the name of a file to which statistics data should be saved on the PC.

> Click the “Read: IVM ➨ PC” button.
➨ After the statistics file has been transferred, the Assistant presents the statistics data to the user.

Alternatively, a previously saved statistics file can be displayed once again. In this case click the “Load: File --> PC” button instead of “Read: IVM --> PC”, and specify the file to be displayed in the dialog box which then appears.

10 Appendix: Data Transmission via FTP

Due to the minimal transmission bandwidth available via the Assistant, it is advisable to transmit large amounts of data, for example upgrades, backups and restore files, via the LAN interface.

10.1 Hardware Requirements

To transmit large amounts of data, a PC or laptop must be connected to the IVM LAN interface. using a CAT5 crossover cable.

The LAN interface at the IVMS8/S8R and the IVMP8/P8R is located at the module's front panel (RJ 45 socket connector). With the IVML8/L24, the LAN interface can be accessed via the LAN adapter which is provided as standard equipment (SIPAC 1U - RJ45, article number C39228-A7195-A10).

After connecting the PC or laptop to the LAN interface using the cable, all hardware requirements for data transmission have been met.

10.2 Software Requirements

A TCP/IP stack and a suitable FTP tool must be installed to the PC or the laptop. Refer to the corresponding documentation regarding configuration of the TCP/IP stack and use of the FTP tool.

In order for data transmission to function correctly, the IP addresses of the PC or the laptop and IVM must be set correspondingly.
The IVM's default IP address is: 192.168.1.2

10.3 Preparation for Data Transmission

After an FTP connection has been established by entering the IVM's IP address (default: 192.168.1.2), the user is requested to enter a user name and a password. User name and password are checked against the system settings, i.e., login is only possible with user names and passwords which have been entered to the system. As a rule, the user group "Service" is adequate for log-on authority. However, if the customer maintains the system him or herself, or if a customer password has been assigned, only this password may be used.

After successful log on, data transmission can be started.

FTP-data transmission is executed in binary mode. Before data transmission, the binary mode has to be updated (see below).

Example for the transfer of the Backup File via FTP:

The example describes the procedure for the transfer of the backup file (ivm_bak.tar) created on the IVM (see section 8.1). The MS-DOS prompt is used in the example. Other terminal programs can generally be used.

1. Open the MS-DOS prompt (Windows standard).
2. Change to the directory into which the backup file should be transferred (for example, ..\Hicom Assistant E\xml).
3. Enter the ftp command followed by the IP address of the IVM (Default IP address of the IVM: 192.168.1.2):
   C:\Hicom Assistant E\xml> ftp 192.168.1.2(example)
   The completion of the ftp command can take a few moments.
4. The prompt for the user name appears (Username).
   Enter the same user name needed for the Assistant-Access for HiPath.
5. The prompt for the password appears.
   Enter the same password needed for the Assistant-Access to HiPath.
6. The FTP connection will be established. This is identifiable by the prompt ‚ftp>'.
7. Enter the binary-command:
   ftp> binary(example)
8. Start the transfer of the backup file with the get command:
   ftp> get ivm_bak.tar(example)

Successful data transfer is confirmed by the following message.

Transfer complete (example)

Example for transfer of the Restore File via FTP:

For data transfer proceed as described in section 8.2.

The MS-DOS prompt is used in the example. Other terminal programs can generally be used.

1. Open the MS-DOS prompt (Windows standard).
2. Change to the directory on the PC/laptop in which the file ivm_res.tar is found (e.g.,: ..\Hicom Assistant E\xml\ivm_res.tar).
3. Enter the ftp command followed by the IP address of the IVM (Default IP address of the IVM: 192.168.1.2):
   C:\Hicom Assistant E\xml\ivm_res.tar> ftp 192.168.1.2 (example)
   The completion of the ftp command can take a few moments.

4. The prompt for the user name appears (Username).
   Enter the same user name needed for the Assistant-Access for HiPath.
5. Enter the same password needed for the Assistant-Access to HiPath .
6. The FTP connection will be established. This is identifiable by the prompt ‚ftp>'.
7. Enter the binary command:
   ftp> binary (example)
8. Start the transfer of the backup file with the put command:
   ftp> put ivm_res.tar (example)

Successful data transfer is confirmed by the following message.

Transfer complete (example)

10.4 Eliminating LAN Access Errors

Symptom	Cause	Remedy
The following error message appears after attempting to log in via FTP: “Could not open host ...., user name and/or password was not accepted for log-in”	Password or user name has been entered incorrectly.	Enter password and user name correctly!
The following error message appears after attempting to log in via FTP: “Remote host has closed the connection”	FTP access has not been activated at the Assistant.	Activate FTP access at the Assistant.

10.5 List of XML Files

Upgrade, backup and restore:

File Name	Function
ivm_aps.tar	IVM APS file
ivm_lan1.tar	IVM language 1 voice prompt file
ivm_lan2.tar	IVM language 2 voice prompt file
ivm_lan3.tar	IVM language 3 voice prompt file
ivm_bak.tar	Backup file
ivm_res.tar	Restore file

11 Appendix: Sample Log File

In the following example 19 mailboxes are created simultaneously, and an error occurs during creation of the 8th mailbox. If more than 5 identical events are recorded, they are summarized as of event 6, and the last identical event included in the summary is once again recorded in detail.

Beginning of the first summarized event

```
<LogEvent>
  <Time>2001-08-31T04:05:49</Time>
  <Action>Creating mailbox</Action>
  <MbNo>101</MbNo>
</LogEvent>
<LogEvent>
  <Time>2001-08-31T04:05:49</Time>
  <Action>Creating mailbox</Action>
  <MbNo>102</MbNo>
</LogEvent>
<LogEvent>
  <Time>2001-08-31T04:05:49</Time>
  <Action>Creating mailbox</Action>
  <MbNo>103</MbNo>
</LogEvent>
<LogEvent>
  <Time>2001-08-31T04:05:49</Time>
  <Action>Creating mailbox</Action>
  <MbNo>104</MbNo>
</LogEvent>
<LogEvent>
  <Time>2001-08-31T04:05:49</Time>
  <Action>Creating mailbox</Action>
  <MbNo>105</MbNo>
</LogEvent>
```

Summary of remaining events

```
<LogEvent>
  <Time>2001-08-31T04:05:49</Time>
 <Action>Creating mailbox [ 2 times ]</Action>
  <MbNo>107</MbNo>
</LogEvent>
```

An error is detected

```
<LogEvent>
  <Time>2001-08-31T04:05:49</Time>
 <Action>[ERROR] Creating mailbox</Action>
  <MbNo>108</MbNo>
</LogEvent>
```

```
<LogEvent>                                          Summary is restarted
  <Time>2001-08-31T04:05:49</Time>
  <Action>Creating mailbox</Action>
  <MbNo>109</MbNo>
</LogEvent>
<LogEvent>
  <Time>2001-08-31T04:05:49</Time>
  <Action>Creating mailbox</Action>
  <MbNo>110</MbNo>
</LogEvent>
<LogEvent>
  <Time>2001-08-31T04:05:49</Time>
  <Action>Creating mailbox</Action>
  <MbNo>111</MbNo>
</LogEvent>
<LogEvent>
  <Time>2001-08-31T04:05:49</Time>
  <Action>Creating mailbox</Action>
  <MbNo>112</MbNo>
</LogEvent>
<LogEvent>                                          Summary of remaining events
  <Time>2001-08-31T04:05:49</Time>
 <Action>Creating mailbox [ 7 times ]</Action>
  <MbNo>119</MbNo>                                  Last mailbox number to be created
</LogEvent>
```

List of Abbreviations

This table shows some important abbreviations.

Abbreviation	Definition
AA	AutoAttendant
ACK	Acknowledge
CDS	Customer Data Set
COS	Class Of Service
DTMF	Dual Tone Multy Frequency
FTP	File Transfer Protocol
HW	Hardware
IP	Internet Protocol
IVM	Integrated Voice Mail
LAN	Local Area Network
MAC	Medium Access Control
MWI	Message Waiting Indication
PBX	Private Branch eXchange
SW	Software
TFTP	Trivial File Transfer Protocol
USBS	User Signaling Bearer Service

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The information provided in this document contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products.

An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

The device conforms to the EU directive 1999/5/EG, as attested by the CE mark.

This device has been manufactured in accordance with our certified environmental management system (ISO 14001). This process ensures that energy consumption and the use of primary raw materials are kept to a minimum, thus reducing waste production.

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